

WHAT IS CLAIMED IS:

1. A lithographic apparatus, comprising:
 - an illumination system that produces a plurality of sub-beams of radiation;
 - a plurality of patterning arrays of individually controllable elements, wherein each patterning array patterns a respective sub-beam with a pattern, the patterning arrays being spaced apart in an object plane;
 - a substrate table that supports a substrate; and
 - a projection system that projects the patterned sub-beams, such that the patterned sub-beams overlap to form a combined image on a target portion of the substrate.
2. The apparatus according to claim 1, wherein the projection system comprises:
 - a plurality of field lens systems corresponding in number to the patterning arrays; and
 - a common part, whereby the field lens systems form images of their respective patterning arrays in a pupil plane of the common part.
3. The apparatus according to claim 2, wherein said projection system has an overall magnification of from about 1/2 to about 1/5.
4. The apparatus according to claim 1, wherein said illumination system comprises a single radiation source from which the plurality of sub-beams are derived.

5. The apparatus according to claim 4, wherein said illumination system further comprises phase adjustors in the paths of the separate sub-beams.

6. The apparatus according to claim 1, wherein said illumination system comprises light guides that guide the sub-beams to their respective patterning arrays.

7. The apparatus according to claim 1, wherein said illumination system comprises an optical system including one or more beam directing mirrors.

8. The apparatus according to claim 1, further comprising a second patterning arrays.

9. The apparatus according to claim 1, further comprising second through fourth patterning arrays.

10. A device manufacturing method, comprising:
producing a plurality of sub-beams of radiation using an illumination system;
imparting respective ones of said sub-beams with a pattern using a plurality of patterning arrays of individually controllable elements; and
projecting the patterned sub-beams of radiation onto a substrate, such that they overlap and form a combined image on a target portion of the substrate.

11. A method, comprising:

patterned individual beams of radiation generated from an illumination source using a respective individual patterning array in a plurality of patterning arrays of individually controllable elements spaced apart in an object plane; and

overlapping the individual patterned beams to form a combined image on a target portion of a substrate, whereby the patterned individual beams arrive from different angles so that the combined image has a higher effective numerical aperture.